State Compendium - Region 9

Programs and Regulatory Activities Related to Animal Feeding Operations

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CHAPTER 1. INTRODUCTION

This compendium has been developed to support the U.S. Environmental Protection Agency's (EPA) efforts to address the environmental and public health problems associated with animal feeding operations (AFOs) and concentrated animal feeding operations (CAFOs). The compendium is a compilation of AFO-related state program and state initiative information intended to illustrate how states are regulating AFOs, with a specific focus on the use of permits or similar mechanisms. This document is not intended as an evaluation of the effectiveness of individual state efforts.

Most of the State programmatic and regulatory information gathered and presented in this document pertains to controlling water quality impacts from AFOs. Although some states have designed regulatory standards to control non-water quality impacts (e.g., setback requirements for odor control), the vast majority of information presented is based on state efforts to address water quality and nutrient management issues.

The *Compendium* has been compiled from a number of publicly available information sources, including:

- Previously published research and existing surveys of State AFO and CAFO programs
- World Wide Web pages of state governments, agencies, and national agriculture organizations
- Select publicly accessible state statutes and regulations (generally accessed via the Web)
- National Pollutant Discharge Elimination System (NPDES) permits developed for CAFOs
- Summaries of State program information provided by EPA regional offices

Based on these sources of publicly available information, the *Compendium* represents a reasonable appraisal of how states are addressing AFO-related environmental problems. Nevertheless, the information presented here is subject to several important limits. First, in compiling this compendium no new formal survey of the states was conducted, nor was a comprehensive review of each state's regulations undertaken, as both were beyond the scope of this task. Thus, in some instances information presented here may be limited or minor gaps may exist. Second, state regulation of AFOs and CAFOs can be complex, involving both federal and state laws and regulations, often originating at the state level from several different agencies, with numerous variations in approaches, requirements, and jurisdiction among the different states. Consequently, different levels of information may be available among states and even between relevant agencies within a state. Finally, the various sources of publicly available information used were reviewed and compiled over a period of time during which many States were reexamining and revising their AFO regulations. As a result, this compendium is by necessity a working document that depicts reasonably current practices, but may in some instances be superceded by recent state programmatic and regulatory changes. The information presented here must be considered subject to these limits and specific regulatory requirements should be verified with state or EPA authorities as appropriate.

The *Compendium of State AFO Programs* consists of four chapters, including this introduction, and three Appendices. Chapter 2 of this document provides a national overview of State AFO initiatives based on the publicly available data. It attempts to summarize how states regulate

AFOs and highlights key aspects of State AFO programs.

Chapter 3 presents individual state profiles. Each profile includes available information addressing: background, lead regulatory agency, state regulations regarding AFO/CAFOs, types of permits, permit coverage, permit conditions, enforcement information, state voluntary programs, additional state-specific information, and references.

Finally, the *Compendium* contains three Appendices. Appendix A describe methods used to develop the *Compendium* and highlights the limits of the data collection efforts. Appendix B lists some of the more frequently used acronyms. Appendix C provides a glossary of useful terms associated with animal feedlots.

CHAPTER 2. NATIONAL SUMMARY OF STATE INITIATIVES

This chapter presents a national overview of state AFO regulatory programs and initiatives based on a review of publicly available data. The discussion begins with a brief review of the respective federal and state roles in administering the National Pollutant Discharge Elimination System (NPDES) program (Section 2.1), followed by a summary of the federal regulations addressing AFOs and CAFOs (Section 2.2). The remainder of this chapter summarizes State Programs/Initiatives (Section 2.3) and Recent State Initiatives/Trends (Section 2.4).

2.1 Overview of EPA/State Roles in NPDES Program

Under the Clean Water Act (CWA), NPDES permits may be issued by EPA or any state authorized by EPA to implement the NPDES program. Currently, 44 states are authorized to administer the base NPDES program.[1] (The base program includes the federal requirements applicable to AFOs and CAFOs, which are discussed below).[2] To become an authorized NPDES state, the requirements imposed under a State's NPDES program must at a minimum be as stringent as the requirements imposed under the federal NPDES program. The states, however, may impose requirements that are broader in scope or more stringent than the requirements imposed under the federal NPDES program. In states not authorized to implement the NPDES program, the appropriate EPA Regional office is responsible for implementing the NPDES program.

Regarding the regulation of AFOs, 44 of the states authorized to implement the NPDES program have some form of program requirements generally deemed to be as stringent as the federal requirements applicable to AFOs. Yet, it appears that only a handful of states rely solely on their State NPDES regulations to address CAFOs. Rather, most use their NPDES regulations as one part of their CAFO program and supplement these requirements with additional provisions.

Because the federal CAFO regulations constitute the core program requirements in many authorized states and are used for purposes of comparison and summary in this document, these regulations are briefly summarized below.

2.2 Overvieew of EPA AFO/CAFO Definitions and Effluent Limits, Under the Federal NPDES Program

Under the federal NPDES program, EPA has developed regulations that define which facilities constitute AFOs and which constitute CAFOs. Under these regulations, facilities that constitute CAFOs are defined as point sources for purposes of the NPDES program. No facility may discharge pollutants from a point source to waters of the United States without a NPDES permit.

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[1] State NPDES authorization may be obtained for the base program, as well as for components addressing federal facilities, pretreatment, general permits, and sludge. The Virgin Islands is also authorized to administer the NPDES program.

[2] Alaska, Arizona, Idaho, Massachusetts, New Hampshire, and New Mexico are not authorized to implement the NPDES program. Oklahoma is delegated to implement the NPDES program, however; Oklahoma does not issue a general NPDES permit specifically for CAFOs and is in effect unauthorized to administer the CAFO portion of the NPDES program. Oklahoma CAFOs should apply for coverage under the general NPDES CAFO permit issued by U.S. EPA Region 6 (See 63 FR 53002).

The existing federal regulatory definitions of AFOs and CAFOs are provided at 40 *C.F.R.* § 122.23 and Part 122, Appendix B. These regulations define an AFO as a facility that meets the following criteria:

- Animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period.

- Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.[3]

Federal regulations define a CAFO generally as an animal feeding operation that:

- Confines more than 1,000 animal units (AUs)[4], or

- Confines between 301 to 1,000 AUs and discharges pollutants:

  - Into waters of the United States through a man-made ditch, flushing system, or similar man-made device, or

  - Directly into waters of the United States that originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.

The CAFO regulatory definition also provides that facilities that discharge pollutants only in the event of a 25-year, 24-hour storm event are not defined as CAFOs.

Under existing federal regulations, the permitting authority (e.g., EPA or an authorized state) can designate an AFO as a CAFO upon determining that the operation is a significant contributor of pollution to waters of the United States. This determination, which takes a number of factors into account (e.g., slope, vegetation, and the proximity of the operation to surface waters), is based on an onsite inspection by the agency that issues the permits and is subject to certain discharge conditions.

In addition to the provisions that define AFOs and CAFOs, EPA has promulgated an effluent limitation guideline (ELG) applicable to feedlots (feedlots are defined in the same manner as CAFOs) (see 40 *C.F.R.* § 412). This regulation generally establishes that CAFOs are subject to a zero discharge standard except for discharges, resulting from a catastrophic or chronic storm event, that occur from a properly maintained and operated waste management system designed to control waste and runoff from a 25-year, 24-hour storm.

2.3 State Programs/Initiatives

[3] 40 *CFR* 122.23 (b)(1).

[4] The following examples are animal quantities equivalent to 1,000 animal units: 1,000 slaughter and feeder cattle, 700 mature dairy cattle, 2,500 swine each weighing more than 25 kilograms, 30,000 laying hens or broilers (if a facility uses a liquid manure system), and 100,000 laying hens or broilers (if a facility uses continuous overflow watering). See 40 *CFR* Part 122, Appendix B.

The national summary of state programs and initiatives is divided into four categories: (1) regulatory programs used by states, (2) State definitions of CAFO/AFO, (3) use of general versus individual permits, and (4) key permit conditions.

2.3.1 Regulatory Approach

Figure 1 provides a state-by-state depiction of the AFO permitting mechanisms available in each state. States have five categories of permitting mechanisms:

- Federally Administered NPDES Program
- Federally Administered NPDES Program and State Administered Non-NPDES Program
- State Administered NPDES Program only
- State Administered NPDES Program and State Administered Non-NPDES Program
- State Administered Non-NPDES Program only

As discussed above, 44 states are authorized to implement the base NPDES CAFO program. As illustrated in Figure 1 and summarized in Table 1, of the 44 states authorized to implement the NPDES CAFO program:

- Thirty-two states administer a State NPDES CAFO program in combination with some other state permit, license, or authorization program. Typically, this additional State authorization is a construction or operating permit.

- Seven states regulate CAFOs exclusively under their state NPDES authority (HI, NJ, NV, NY, RI, TN, WV).

- six states have chosen to solely regulate CAFOs under State non-NPDES programs (CO, MI, NC, OR, SC, VA).

Of the six states not authorized to administer the NPDES program:

- Three rely solely on federal NPDES permits to address CAFOs (AK, MA, NH).

- Three impose some form of a state non-NPDES program requirement, although EPA remains responsible for administering the NPDES CAFO requirements in these states (AZ, ID, NM).

While Oklahoma is one of the 44 NPDES-delegated states, Oklahoma does not have a general NPDES permit specific to CAFOs. In this special case, Region 6 administers the portion of Oklahoma's NPDES program that deals with CAFOs by covering Oklahoma CAFOs under the Region 6 general NPDES permit for CAFOs. Oklahoma also uses a State non-NPDES operating permit to regulate state CAFOs.

Overall, 28 states have a combination of permitting mechanisms available for addressing environmental impacts from AFOs. Eleven states exclusively regulate CAFOs under a state or federal NPDES program. Five states (CO, MI, NC, SC and OR) only regulate AFOs under a

state non-NPDES program, with Colorado and Michigan not requiring any AFOs to obtain any form of operating permit.

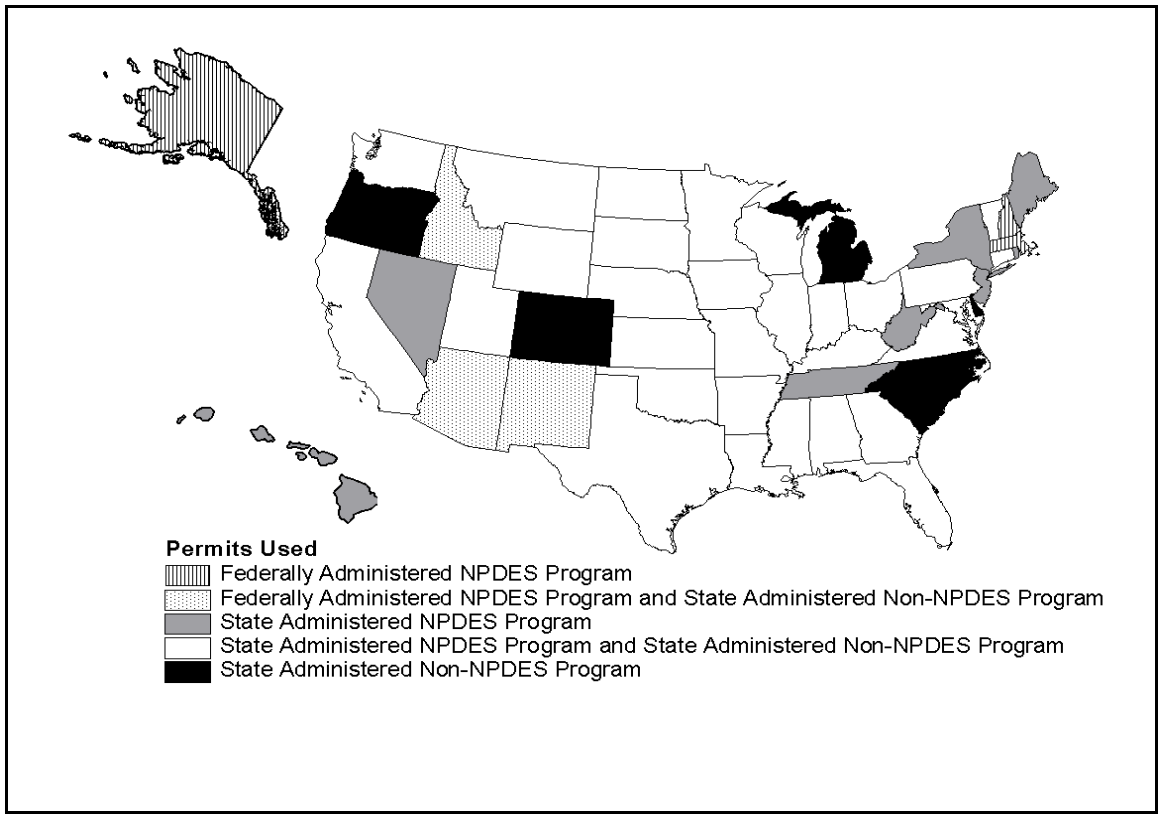

Figure 1. Regulatory Mechanisms for AFO Permitting in Each State

2.3.2 State Definitions of CAFO

EPA and state definitions of a CAFO are important because the definitions determine the scope of the existing federal and state regulatory programs. EPA's definition of a CAFO is based on the length of time animals are confined, the number of animals confined (animal units), and whether or not the facility directly discharges pollutants into waters of the United States. Virtually all state NPDES CAFO programs use the federal definition for CAFO. The vast majority of states also use the federal definition of CAFO for State non-NPDES CAFO programs. Several states, however, use a lower numeric threshold (number of animal units) for non-NPDES permitting. For example, Minnesota issues individual NPDES permits to confined feeding operations as defined by federal regulation and State feedlot permits (non-NPDES) to facilities with more than 10 animal units (calculated by using the formula used in the federal definition).

States that use the federal definition of CAFO may also increase the scope of coverage required through state NPDES programs by reducing the number of animals (number of animal units) a facility can confine before being subject to permitting.

Table 1. Identification of Permit Type and Permit Requirements Within State AFO Programs in the United States[1]

State	State NPDES	State Control Mechanism[2] (non-NPDES)		General/ Individual Permits				Permit Conditions[3]			
		Construction	Operating	NPDES		State non-NPDES		Effluent[4]	Management	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsite
AL	✓	✓	✓	✓	✓			✓	✓	✓	
AK	ND[5]										
AR	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
AZ	ND		✓	✓		✓				✓	
CA	✓	✓	✓	✓		✓	✓	✓		✓	
CO	*	✓	✓				✓	✓	✓	✓	
CT	✓	✓			✓		✓	✓	✓	✓	
DE	✓		✓						✓		
FL	✓	✓	✓		✓			✓	✓	✓	
GA	✓		✓	✓	✓		✓		✓	✓	
HI	✓				✓						
IA	✓	✓	✓		✓		✓	✓	✓	✓	✓
ID	ND	✓	✓	✓			✓	✓	✓	✓	✓
IL	✓	✓	✓	✓	✓		✓	✓	✓	✓	
IN	✓	✓	✓		✓				✓	✓	
KY	✓	✓	✓			✓	✓	✓	✓	✓	✓
KS	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

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		Construction	Operating	NPDES		State non-NPDES		Effluent[4]	Management	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsite
LA	✓		✓		✓		✓	✓	✓	✓	
MA	ND										
MD	✓	✓	✓	✓	✓		✓	✓	✓	✓	
ME	✓		✓		✓			✓	✓	✓	✓
MI	*										
MN	✓	✓	✓		✓		✓	✓	✓	✓	
MO	✓	✓	✓	✓	✓		✓	✓	✓	✓	
MS	✓		✓	✓	✓	✓	✓	✓			
MT	✓	✓	✓	✓	✓	✓	✓	✓		✓	
NE	✓	✓	✓		✓		✓	✓	✓	✓	
NC	*		✓			✓	✓	✓	✓	✓	
ND	✓	✓	✓		✓		✓	✓	✓	✓	
NH	ND										
NJ	✓				✓					✓	
NM	ND		✓				✓		✓	✓	
NV	✓				✓						
NY	✓			✓	✓			✓	✓	✓	

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State	State NPDES	State Control Mechanism[2] (non-NPDES)		General/ Individual Permits				Permit Conditions[3]			
		Construction	Operating	NPDES		State non-NPDES		Effluent[4]	Management	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsite
OH	✓	✓	✓	✓	✓		✓	✓	✓	✓	
OK	✓	✓	✓	✓	✓		✓	✓	✓	✓	
OR	*	✓	✓			✓	✓			✓	
PA	✓		✓	✓	✓			✓	✓	✓	✓
RI	✓				✓						
SC	*	✓	✓			✓	✓	✓	✓	✓	
SD	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
TN	✓			✓	✓			✓	✓	✓	
TX	✓		✓	✓	✓		✓	✓	✓	✓	
UT	✓	✓	✓	✓	✓		✓		✓		
VA	✓		✓			✓	✓	✓	✓	✓	
VT	✓	✓					✓	✓	✓	✓	
WA	✓		✓	✓	✓	✓	✓	✓	✓	✓	
WI	✓	✓	✓	✓	✓			✓	✓	✓	
WV	✓							✓	✓	✓	
WY	✓	✓			✓		✓	✓	✓	✓	
Totals	38	27	36	20	32	12	31	35	38	40	8

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State	State NPDES	State Control Mechanism[2] (non-NPDES)		General/ Individual Permits				Permit Conditions[3]			
		Construction	Operating	NPDES		State non-NPDES		Effluent[4]	Management	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsite

[1] Blank data cells indicate that the program element was not a primary component of the state program or information was not sufficient to make a determination.

[2] State control mechanisms include all forms of formal state approval required to construct or operate an AFO, such as state issued non-NPDES permits, letters of approval, and certificates of coverage.

[3] Permit conditions are requirements imposed through either NPDES or state non-NPDES programs.

[4] Effluent limits refer to whether or not a state imposes federal effluent limits to AFOs/CAFOs (i.e., no discharge allowed except during 25 year, 24- hour storms). A check could indicate that a state imposes effluent limits that are more strict than the federal requirements (e.g., Arkansas does not allow any discharges regardless of storm events).

[5] ND = States not authorized to administer the NPDES program.

* Although authorized to administer the NPDES program, the state chooses to use a separate program to address AFOs.

Some states have unique definitions for their livestock regulatory programs that do not follow the federal definition (See Table 2). States typically base their definition on number of animals confined, weight of animals and design capacity of waste control system, or gross income of agricultural operation. These definitions are exclusively applied to State non-NPDES programs.

Table 2. Selected State CAFO Definitions that Differ from the EPA Definition and Use of the Definition in Regulatory Control

State	Classification Scheme	Facilities Subject to State Non-NPDES Regulatory
Indiana	Number of animals	Operation with 600 swine, 300 cattle, or 30,000 birds
Iowa	Weight of animals in a confinement feeding operation	Permitting threshold for construction permit based on type of waste control system and design capacity (based on weight) of that system (e.g., an anaerobic lagoon with a design capacity of 400,000 lbs of bovine requires construction permits)
Kansas	Number of animals	Operations with 300 animal units
Maryland	Gross income and animal units	All agricultural operations with incomes of at least $2,500 or eight animal units
North Carolina	Number of animals	Operations designed for 100 head of cattle, 75 horses, 250 swine, 1,000 sheep, or 30,000 birds

One important difference between state livestock regulatory programs and the federal program is that numerous states have addressed the issue of authority to issue permits (or other control mechanisms) to CAFOs by requiring that all or a specified subgroup of CAFOs regardless of whether they have a direct point source discharge of pollutants to U.S. waters obtain a permit.[5] This requirement is imposed under state, not federal regulations.

For example, Arkansas requires all AFOs that use a liquid waste management system to obtain permit coverage under either the State-issued general permit or an individual permit. AFOs with dry waste management systems are not automatically required to obtain a permit; however, all facilities with more than 1,000 animal units are subject to coverage under the State's general permit. This is an important distinction because states have opted to expand the scope of facilities that fall within the definition of a CAFO by eliminating the requirement that a facility must have a discharge before being considered a CAFO. In other words, states are requiring large facilities with a potential to discharge to abide by CAFO rules.

2.3.3 General/Individual Permits

The regulation of CAFOs is challenging, in part, because of the large number of facilities across the country. In 1995 it was estimated that 450,000 operations nationwide confined or concentrated animals, of which a very conservative estimate indicated that at least 6,600 had

[5] Preliminary data indicate that the following states require all or a subset of CAFOs (under various definitions) to obtain permits: AL, AR, AZ, CO, DE, IA, ID, IN, KS, KY, MN, MS, NC, OH, OR, SC, WY.

more than 1,000 animal units and may have been considered CAFOs under the federal definition[6]. More recent estimates describe an AFO universe of approximately 375,700 operations of which approximately 12,600 are AFO operations with more than 1,000 AUs, 26,500 are AFO operations with 300-1,000 AUs, and 336,600 are AFO operations with fewer than 300 AUs.[7] One way of reducing the administrative burden associated with permitting such large numbers of facilities is through general permits. Existing regulations provide that general permits may be issued to cover a category of discharges within a geographic region. Within such areas, general permits may regulate either storm water point sources or a category of point sources that involves similar operations with similar wastes. Operations subject to the same effluent limitations and operating conditions, and requiring similar monitoring, are most appropriately regulated under a general permit. EPA and the states are using general permits to regulate CAFOs, and this trend appears to be increasing. South Dakota, for example, has established two general permits for CAFOs, one to address swine operations and another for all other livestock.

Of the 44 states authorized to implement the NPDES program:

- Twenty have issued a State NPDES general permit for CAFOs (this number excludes federally issued general permits).

- Twelve have issued a state non-NPDES general permit for CAFOs.

Of the six states not authorized to administer the NPDES program (this excludes Oklahoma), four are subject to a federal general permit.[8]

2.3.4 Permit Conditions

Normally, a NPDES permit will include several types of permit conditions, including technology-based effluent limits (i.e., zero discharge except for discharges resulting from chronic or catastrophic rainfall events if a facility is designed to hold process wastewater and runoff from a 25-year, 24-hour storm for CAFOs subject to § 412), water quality-based effluent limits (if the technology-based limit will not ensure compliance with State water quality standards), monitoring and reporting conditions, special conditions (e.g., conditions that impose additional controls beyond numeric limits, such as best management practices [BMPs]), and standard conditions (e.g., duty to comply, duty to ensure proper operation, and duty to provide information).

The federal technology-based effluent limit for CAFOs is "no discharge." The effluent limit includes an exception in the event of chronic or catastrophic rain for facilities that have been

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[6] *Animal Agriculture: Information on Waste Management and Water Quality Issues*, General Accounting Office, 1995.

[7] 66 *FR* 2985, January 12, 2001.

[8] CAFOs in New Mexico and Oklahoma are subject to an EPA Region 6 general permit; facilities in Idaho and Alaska are subject to an EPA Region 10 permit, although no facilities are covered under a NPDES permit in Alaska; and CAFOs in Arizona are subject to an EPA Region 9 general permit, although no facilities are covered under the general permit. New Hampshire, and Massachusetts are located in EPA Region 1, which does not have a general NPDES permit for CAFOs.

designed, constructed, and operated to contain all waste water and runoff from a 25-year, 24-hour storm. States not authorized to implement the NPDES program must use this federal effluent limit.

Authorized states generally are equally as stringent, but may be more stringent. Based on a review of available data, of the 44 states authorized to implement the NPDES program 34 use the federal effluent limitation guideline and 6 use a more stringent limit.

Some states with more stringent effluent limits may partially or totally prohibit discharges related to storm events. In Arkansas, for example, the effluent limit prohibits discharges from liquid waste management systems, including periods of precipitation greater than the 25-year, 24-hour storm event. California requires no discharges from new waste control structures even during 100-year storms. And in Iowa, confinement feeding operations (i.e., roofed AFOs) are prohibited from any direct discharge and must dispose of manure in a manner that will not cause a pollution of surface or ground water.

A key concern regarding the management of CAFO waste is ensuring appropriate land application. Land application is the primary management practice used by CAFOs to dispose of animal waste. Several estimates indicate that 90 percent of CAFO-generated waste is land applied. Where properly done, land application of CAFO waste fosters the reuse of the nitrogen, phosphorus, and potassium in these wastes for crop growth. However, where such wastes are excessively or improperly applied, land application can contribute to water quality impairment. Thirty-four states impose requirements addressing land application either through NPDES or non-NPDES programs. Typical requirements include that CAFO waste be applied at agronomic rates and that CAFO operators develop Waste Management Plans.

The breakout of state requirements is as follows:

- Forty states require that CAFO waste be land applied at agronomic rates.
- Thirty-eight states require the development and use of Waste Management Plans.
- One state, Georgia, issues land application system (LAS) permits.

Agronomic rates are typically based on the nitrogen needs of crops, although some states specify that waste be applied at agronomic rates for nitrogen and phosphorous. The determination of agronomic rates varies from state to state. Some states do not address how agronomic rates should be determined, while others, such as Colorado, require CAFO operators to complete detailed plans and field sampling to determine the appropriate amount of waste that can be land applied.

The complexity and details required in a waste management plan also vary among states. Some states do not explicitly identify what items must be addressed in a waste management plan, whereas others have detailed requirements. Typically, CAFO operators are required to address these items in a waste management plan:

- Estimates of the annual volume of waste.
- Schedules for emptying and applying wastes.
- Rates and locations for applying wastes.
- Provisions for determining agronomic rates (i.e., soil testing).

- Provisions for conducting required monitoring and reporting.
- Written agreements with landowners to accept liquid waste.

2.4 Recent State Initiatives/Trends

One clear indication that states have an increasing interest in expanding their efforts to control water quality impacts from AFOs is the promulgation of new state AFO laws, regulations and program initiatives. At least 28 states have developed new laws or regulations related to AFOs since 1996. For example, Kansas, Kentucky, North Carolina, and Wyoming passed legislation regarding swine facilities, with Kentucky and North Carolina imposing moratoriums on the expansion of swine AFOs until state management/regulatory plans could be developed. Mississippi also has imposed a 2-year moratorium on any new CAFOs.

Alabama's recent efforts include developing an NPDES general permitting rule and a Memorandum of Agreement outlining state agency responsibilities as they relate to AFOs. Washington's Dairy Law subjects all dairy farms with more than 300 animal units to permitting and requires each facility to develop NRCS-approved nutrient management plans. Indiana's Confined Feeding Control Law also requires AFOs to develop waste management plans and receive state approval for operating AFOs.

2.5 Summary

State efforts to manage AFOs are carried out through issuance of NPDES permits and state issued non-NPDES permits and/or authorizations. State AFO regulatory programs are directed in large part at controlling the potential environmental impacts on surface water, but also at protecting ground water and managing industry growth. State permits and/or authorization requirements are often imposed regardless of NPDES requirements. State non-NPDES AFO programs are often more stringent than NPDES programs and state efforts often extend coverage to smaller classes of AFOs. Further, the implementation of state non-NPDES programs often receives more agency attention than the implementation of NPDES programs, with several states actively choosing not to use NPDES permits.

While specific state efforts relating to AFOs vary, most states regulate facilities through permitting programs that require animal waste disposal systems to be constructed to prevent the discharge of animal wastes to waters of the United States. Coverage under state permitting programs depends on such criteria as facility size, potential for discharge, type of facility, and type of waste control. Information indicates that state agencies are increasing their commitment of resources to address environmental concerns from AFOs.

CHAPTER 3. STATE PROFILES

This chapter presents individual profiles of state programmatic and regulatory efforts addressing AFOs for each of the 50 states. These profiles provide a state-by-state summary of the key elements within State AFO regulatory programs. The profiles summarize existing State activities to address environmental and health impacts from AFOs. The profiles provide a comprehensive overview of each State program, including the following:

- A description of the lead regulatory agency(ies) (i.e., permitting authority) and agency(ies) responsible for directing voluntary programs.

- State regulations that address AFOs and voluntary programs that encourage regulatory compliance or the use of best management practices.

- The types of permits issued and the permitting processes for each state, the circumstances for which permits are required (i.e., permit coverage), and the requirements and responsibilities of AFO owners and operators (i.e., permit conditions).

- State enforcement activities, inspection programs, and staffing and funding levels dedicated to addressing AFOs.

- Examples of innovative or interesting state projects or programs to control the potential negative environmental impacts of AFOs.

If information on a particular program element was not readily available, or not identified, the following phrase was used: "no information was found in publicly available sources." Figure 3.1 presents the outline used for each of the state profiles.

1.0 Background

2.0 Lead Regulatory Agency

3.0 State Regulations Regarding AFOs/CAFOs

4.0 Type of Permits
- *NPDES*
- *Other (general use or general agriculture permits, construction permits, and operating permits)*

5.0 Permit Coverage (potential nuisance and/or location)

6.0 Permit Conditions
- *Approvals (permits, letters of intent, or certificates of coverage)*
- *Lagoon Design and Specifications (seepage limits, etc.)*
- *Discharge Rules*
- *Waste Management Plans*
- *Separation Distances*
- *Land Application Requirements*
- *Other Requirements*

7.0 Enforcement Information
- *General Enforcement Information*
- *General Inspection Information*

8.0 Voluntary Programs

9.0 Additional State-Specific Information
- *Cooperative Extension Service*
- *Comprehensive Nutrient Management Plan (CNMP)*
- *Memorandums of Understanding/Agreement (MOUs/MOAs)*
- *Other Information*

10.0 References

Figure 3.1 Outline for Profiles of State Programs and Regulatory Activities Related to Animal Feeding Operations

Arizona's CAFO Program

1.0 Background

Based on information provided to EPA by USDA in the year 2000, there are 38 AFOs with 300 to 1,000 animal units and 80 AFOs with more than 1,000 animal units in Arizona. These are primarily in the dairy sector (USDA, 1999; USDA, 2000). Arizona's CAFOs are concentrated; approximately 70 to 90 percent of the operations are located in Maricopa, Pinal, and Yuma counties (USEPA, 2000).

Although Arizona's 1996 Water Quality Assessment listed waterbodies impaired from stressors such as nutrients and coliforms, no waterbodies were listed specifically because of CAFOs (USEPA, 1998).

2.0 Lead Regulatory Agency

The Arizona Department of Environmental Quality (ADEQ) administers nonpoint source programs to minimize the impacts of CAFOs on the surface waters and ground water of the state. EPA Region 9 has issued a general NPDES permit to cover CAFO facilities in Arizona (Oda, 1997). More information about ADEQ can be found at *www.adeq.state.az.us/*.

3.0 State Regulations Regarding AFOs/CAFOs

Arizona Revised Statutes (ARS) 3-1451 through 3-1456 define beef cattle feedlots, require feedlot operators to obtain a license, provide standards of operation for feedlots, outline the powers and duties of the Water Quality Division, and refer to the authority to suspend or revoke licenses (ALIS Online). License fees are paid to ADEQ and then remitted by ADEQ to the state treasurer and deposited in the general fund (ARS 3-1453). The specific language of statutes 3-1451 through 3-1456 can be found at *www.azleg.state.az.us/ars/3/title3.htm*.

ARS 49-247 (Best Management Practices for Regulated Agricultural Activities) and ARS 49-248 (Agricultural Best Management Practices Advisory Committees) refer to Arizona's agricultural general permits. ARS 49-247 describes in detail the adoption, terms and conditions, economic requirements, and use of agricultural best management practices. ARS 49-248 describes how an advisory committee develops and recommends best management practices for applying nitrogen fertilizer and for CAFOs. Specific language from these statutes can be found at *www.azleg.state.az.us/ars/49/title49.htm*.

Ground water contamination is addressed by Arizona's Ground Water Protection Act. Air regulations are applied according to the Federal Clean Air Act. Wetlands are protected by flood control district/Natural Resources Conservation Service (NRCS) general guidelines (NASDA, 1997).

Arizona has agricultural general permits for nitrogen fertilizers (A.C.C. R18-9-202) and CAFOs (A.C.C. R18-9-203). Under A.C.C. R-18-9-203, anyone who engages in CAFOs is issued an agricultural general permit. Any person who operates a CAFO facility pursuant to an agricultural general permit must comply with all of the following (Secretary of State, n.d.):

- Harvest, stockpile, and dispose of animal manure from CAFOs to minimize discharge of nitrogen pollutants by leaching and runoff.

- Control and dispose of nitrogen-contaminated water resulting from activities associated with a CAFO, up to a 25-year, 24-hour storm event equivalent, to minimize the nitrogen pollutant discharge.

- Close facilities in a manner that minimizes the discharge of nitrogen pollutants.

Specific language from Title 18 can be found at *www.sosaz.com/public_services/*.

4.0 Types of Permits

NPDES

Arizona is not authorized to issue NPDES permits (USEPA, 2000); rather, EPA Region 9 has a general NPDES permit for CAFOs. The existing general permit has expired, but it still applies to the region's permit holders. ADEQ and EPA worked together to draft a new general NPDES CAFO permit, which was available for public comment through November 20, 2000 (USEPA, 2000). This draft permit also will include a requirement for all CAFOs to develop comprehensive nutrient management plans (CNMPs) by the end of 2003 if certain conditions are met (USEPA, 2000).

Other

All Arizona CAFOs are required to seek coverage under Arizona's agricultural general permit, or the statewide CAFO permit. Some CAFOs are permitted under Arizona's ground water program. The application of liquid wastes requires extensive permits. [These permits were not identified.] Beef feedlots facilities must obtain a license from the Department of Agriculture. Beef feedlot licenses require owners and operators to provide reasonable methods of disposal of animal waste (3 ARS 1452).

5.0 Permit Coverage

Facilities that meet the federal animal unit threshold must obtain coverage under the federal CAFO general permit. Regardless of size, those facilities that are significant pollution sources are treated as CAFOs at the federal level. The state issues agricultural general permits to all persons who operate CAFOs. Aquifer protection permits are required if owners or operators of facilities discharge, pollutants, such that they may reach an aquifer. The threshold for obtaining a beef cattle operators license is 500 head of cattle.

6.0 Permit Conditions

Approvals

A site appraisal by NRCS is required before the development of waste structures.

Lagoon Design Specifications

Facilities are not required to follow specific design standards unless a violation occurs. Although no stipulations exist on lagoon seepage, the storage capacity of waste structures must conform to NRCS standards. NRCS provides technical assistance to farmers (NASDA, 1997).

Discharge Rules

Nondelegated states must follow the federal effluent limit: no discharge except during a 25-year, 24-hour storm (ADEQ, 2000b).

Waste Management Plans

Waste management plans are not required under the general permit.

Separation Distances

Local zoning determines the separation distance between waste structures and dwellings or property lines. Animal waste structures must be at least 100 feet away from water wells. The required distance from the bottom of a waste structure to the ground water surface varies (NASDA, 1997).

Land Application Requirements

Agronomic standards are in place for land application of solid manure.

Other Requirements

Facilities must be closed in a manner that minimizes the discharge of nitrogen pollutants.

7.0 Enforcement Information

General Enforcement Information

EPA and ADEQ send inspectors to CAFOs to determine whether they are in compliance with NPDES requirements and, if applicable, the conditions imposed under an NPDES permit. EPA may issue warning letters or notices of violation; administrative orders that require correction of violations; and, depending on the violation, administrative penalties that assess monetary fines. The laws also allow EPA to pursue civil and criminal actions for persons found willfully violating NPDES requirements and endangering the health and welfare of the environment or the public (USEPA, 2000).

General Inspection Information

Violators are identified through inspections and complaints. Inspections are prompted by complaints because routine onsite inspections are not required (NASDA, 1997; USEPA, 1998).

ADEQ has established a CAFO inspection program to curtail existing offsite discharges of runoff or wastewater and to evaluate individual livestock facilities for potential to discharge water contaminated by animal waste. Recommendations and violations are written to facilities to correct deficiencies in waste management practices, waste handling devices, and waste handling structures. At this time, all livestock operations (dairy, swine, poultry, horses, ostrich, etc.) with approximately 300 animal units or more are to be inspected by ADEQ. Inspections focus on effective manure and wastewater management (ADEQ, August 2000a).

ADEQ employees have the authority to inspect livestock facilities through ARS 49-203 B.1.

ADEQ performs livestock facility inspections to evaluate livestock facility compliance with Arizona Administrative Code (A.C.C.) R18-9-202 (Agricultural General Permits: Nitrogen Fertilizers), A.C.C. R18-9-203 (Agricultural General Permits: Concentrated Animal Feeding Operations), A.C.C. R18-11-108 (Narrative Water Quality Standards), and A.C.C. R18-11-109 (Numeric Water Quality Standards).

8.0 Voluntary Programs

ADEQ's Water Quality Division engages in extensive outreach and educational activities to assist CAFO operators.

The Nonpoint Source Discharge program uses a combination of regulatory controls and cooperatively based implementation to address CAFO wastes. The cooperation of community-based watershed advisory groups is vital to the state's nonpoint source program (ADEQ 1997).

NRCS and Arizona universities provide farmers with environmental management seminars, BMP seminars, and technical assistance. Technical and financial assistance is also available to CAFOs through the Agua Fria–New River and Buckeye–Roosevelt Natural Resource Conservation Districts. Finally, one EPA section 319 grant was used for an AFO-related activity in Arizona (USEPA, 1998).

9.0 Additional State-Specific Information

Cooperative Extension Service

The University of Arizona Cooperative Extension provides a link between the university and Arizona residents. The Animal Waste Management Program, sponsored by the extension service, provides a centralized source for information on animal waste and wastewater management. The program focuses on dairy and feedlot waste management, providing users with fact sheets, inspection information, BMPs, worksheets on manure use/management and collection/storage of animal wastes and wastewater, and a number of other useful links. More information about the extension service and the waste management program can be found at *http://ag.arizona.edu/extension/* and *http://ag.arizona.edu/animalwaste/*.

Comprehensive Nutrient Management Plan (CNMP) Certification

Arizona does not have a CNMP preparer certification program. EPA Region 9 and ADEQ are developing a new NPDES CAFO general permit that will require CNMPs (USEPA 2000). The permits should be completed in spring 2000.

10.0 References

ALIS Online. n.d. *Arizona Revised Statutes*. <www.azleg.state.az.us/ars/ars.htm>. Accessed August 2000.

ADEQ. August 200a. *Environmental Programs, Water Quality Compliance Section: Concentrated Animal Feeding Operations*. Arizona Department of Environmental Quality. <www.adeq.state.az.us/environ/water/compliance/index.html>. Accessed August 2000.

ADEQ. August 2000b. *Environmental Programs, Process Wastewater NPDES Permits: Concentrated Animal Feeding Operations.* Arizona Department of Environmental Quality. <www.adeq.state.az.us/environ/water/permits/npdes.html>. Accessed August 2000.

ADEQ. 1997. *Water Quality: Non-point Source*. Arizona Department of Environmental Quality. <www.adeq.state.az.us/water/non/non.htm>. Accessed December 1997.

Arizona Secretary of State. n.d. *Title 18: Environmental Quality, Chapter 9: Department of Environmental Quality, Water Pollution Control*. <www.sosaz.com/public_services/Title_18/18-09.htm>. Accessed August 2000.

NASDA. 1997. *Summary Matrix of State Survey on Waste and Manure Management Regulations*. National Association of State Departments of Agriculture.

Oda, Terry. U. S. Environmental Protection Agency, Region 9. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

USDA. 1999. *1997 Census of Agriculture: Geographic Area Series*. U.S. Department of Agricultural Statistics Service, Washington, DC.

USDA. 2000. Specific queries conducted on the 1997 Census of Agriculture published data. U.S. Department of Agriculture.

USEPA. 1998. *Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs)*. Results of June 1998 Survey of States and Regions compiled by G. Beatty. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

USEPA. 2000. *Arizona Animal Waste Management*. U.S. Environmental Protection Agency, Region 9. <www.epa.gov/region09/cross_pr/animalwaste/arizona.html>. Accessed August 2000.

California's CAFO Program

1.0 Background

Based on information provided to EPA by USDA, there are 1,090 AFOs with 300 to 1,000 animal units and 1,030 AFOs with more than 1,000 animal units in California. These are primarily in the dairy sector (USDA, 1999; USDA, 2000). Currently, fewer than 500 dairies are covered by NPDES permits in the state. Another 1,800 dairies are regulated through local voluntary efforts or informal requirements (Cantu, 2000).

California's waste discharge permitting program has been approved as a NPDES program in compliance with the Clean Water Act. Unlike federal law, the state does not apply different regulatory requirements based on herd size. To regulate dairies, the state of California uses a three-tier program that includes both voluntary compliance and regulations (Martinson, 2000).

The state of California has indicated that surface water and ground water are adversely affected by some dairy operations. The 1996 California State Water Board's Section 303(d) list of waterbodies impaired by dairies includes Estero Americano, Estero de San Antonia, Laguna de Santa Rosa, Stemple Creek, Tomales Bay, Lone Tree Creek, Temple Creek, Chino Creek, the Prado area of Mill Creek, and the Santa Ana River. The State Board named five of these waters as highest priority for the development of Total Maximum Daily Load (TMDLs) within the next 2 years. Additionally, California's 305(b) report lists 22 ground water basins covering more than 10,477 square miles as impaired by dairies (USEPA, 1998).

2.0 Lead Regulatory Agency

The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) regulate the discharge of animal wastes into state waters (California Permit Handbook, 1997). California has nine RWQCBs for the different state regions, which have the authority under state law to protect ground water and surface water from animal waste. Primary authority is from the Porter-Cologne Water Quality Control Act and Title 27 of the California Code of Regulations (Martinson, 2000). More information about SWRCB and RWQCBs can be found at *www.swrcb.ca.gov* and *www.swrcb.ca.gov/rwqcbs/index.html*, respectively.

3.0 State Regulations Regarding AFOs/CAFOs

Regulations that apply to animal feedlots are found in Title 14, Title 22, Title 23, and Title 25 of the California Code of Regulations (California Permit Handbook, 1997). In 1998 California issued statewide minimum standards for discharges of animal waste at CAFOs (California Code of Regulations, Title 27, §22560 *et seq*.) Additional waste management rules are found under California Code of Regulations, Article 8 (Agricultural Solid Waste Management Standards). California has no wetland or air quality regulations that address CAFOs (NASDA, 1997).

4.0 Types of Permits

NPDES

California does not issue individual NPDES permits to CAFOs (Oda, 1997). To discharge to surface waters in California, animal feedlot operators must apply to a Regional Water Resource Control Board (RWQCB) for coverage under the CAFO general NPDES permit. Other NPDES

permits for storm water runoff discharges may be required prior to construction of CAFOs (California Permit Handbook, 1997).

California is considering the use of a state NPDES general permit. Santa Ana Regional Board already covers most of its 340 dairy operations under a general NPDES permit. The general permit used in Santa Ana prescribes waste discharge requirements for animal confinement facilities and permits the discharge of storm flows from facilities during chronic, cumulative, and catastrophic storm events and/or rainfall that totals more than the 25-year, 24-hour storm (USEPA, 1998).

Waste Discharge Requirements Permit (WDR)

CAFO operators may be required to obtain a Waste Discharge Requirements Permit (WDR) in accordance with minimum statewide standards prescribed in the California Code Regulations Title 27 § 22560 et seq. (1998) from an RWQCB in the project area. The permit applies to any facility that discharges or proposes to discharge wastes that may affect ground water or that are released in a diffuse manner. Dischargers required to obtain a WRP must provide general information on and any material changes to the following:

- Average daily volume of facility wastewater and volume or weight of manure.
- Total animal population at the facility and types of animals.
- Animal capacity of the facility.
- Location and size of use or disposal fields and retention ponds, including animal capacity.

Animals must be prevented from entering any surface waterbodies within the confined area of the CAFO (NASDA, 1999). The state and counties regulate dairy waste by requiring dairies to obtain a construction permit.

California's Three-Tier Approach Toward Dairies

California uses a three-tier system to regulate dairies in an effort to protect the environment with the lowest possible amount of regulation (Martinson, 2000).

Tier one is nonregulatory. The facility voluntarily complies with state and federal regulations without a WDR. If a facility discharges to surface waters in cases other than a 25-year, 24-hour storm, it may be required to be covered under a NPDES permit. An example of the voluntary programs under tier one is the Sonoma-Marin Animal Waste Committee, composed of various stakeholders. The committee works together through various methods to control animal waste, such as developing guidelines for appropriate animal waste management such as:

- Structural facilities management and wastewater management
- Nutrient management
- Upland management (Martinson, 2000)

Another voluntary program is the California Dairy Quality Assurance Program, which includes several environmental stewardship components such as:

- Environmental stewardship short courses

- Environmental stewardship farm management plans
- Onsite evaluations by a third party
- Recertification
- Quality control of the evaluation process (Martinson, 2000)

Tier two requires a waiver of WDRs that outlines the conditions the facility must follow. Waivers are issued by the RWQCB only if the facility will not adversely impact water quality if operating according to the given conditions. Monitoring and reporting of data under tier two usually is not required, although recent amendments may affect this (Martinson, 2000).

Tier three requires the issuance of WDRs or NPDES permits. These usually require monitoring and reporting of data to demonstrate compliance. The North Coast RWQCB does not have a waiver policy. Most San Francisco Bay RWQCB dairies are regulated under conditional waivers. The Central Coast, Los Angeles, and San Diego RWQCBs regulate all their dairies under individual WDRs. The Lahontan RWQCB requires all dairies with more than 500 head that are within one half mile of the Mojave River to be covered under a WDR. Forty cattle feed lots and one dairy in the Colorado River Basin RWQCB are regulated under a general WDR/NPDES permit. The Santa Ana RWQCB regulates all dairies under a general WDR/NPDES permit. The Central Valley RWACB regulates about 50 dairies under a general WDR, about 70 dairies under individual WDRs, about 175 dairies under a general industrial storm water permit, and an unknown number under conditional waivers (Martinson, 2000).

5.0 Permit Coverage

The owner or operator of any facility that proposes to discharge to surface waters must obtain an NPDES permit. The application must be submitted 180 days before the start of the proposed activity. The owner or operator of any facility that proposes to discharge wastes in such a way that ground water may be affected must obtain a Waste Discharge Requirements Permit. The application is due 120 days before the start of the activity (California Permit Handbook, 1997).

6.0 Permit Conditions

Approvals

The state appraises waste structure sites before development, and farmers are required to follow specific design standards (NASDA, 1997).

Lagoon Design and Specifications

Lagoons must be lined or underlined with soils containing $\geq$10 percent clay and $\leq$10 percent gravel. An artificial material of equivalent permeability is acceptable (NASDA, 1997).

Discharge Rules

Existing waste structures must contain wastes during a 25-year, 24-hour storm. Retention ponds must be able to handle 20-year peak streamflows. New structures are required to retain wastes

during 100-year storms (NASDA, 1997).

Waste Management Plans

No specific regulatory requirements exist for manure management plans. However, in accordance with California Code of Regulations Title 14 § 17823.1 (1998), manure management practices must prevent the creation of excessive vectors such as domestic flies, mosquitos, cockroaches, rodents, or other adverse public health/well-being conditions. Alternatively, frequent manure removal may be used provided such operations do not result in the creation of adverse public health/well-being conditions (NASDA, 1999).

Separation Distances

Local zoning controls the separation distance between waste structures and property lines. County standards determine separation distance from dwellings and how close animal waste structures can come to ground water. The state requires water wells to be 50 to 100 feet from any animal enclosure and 100 to 150 feet from wastewater lagoons 8 feet or greater [width or depth not specified] (NASDA, 1997).

Land Application Requirements

Land application of animal wastes is limited to "reasonable rates" that do not result in surface runoff (NASDA, 1997) and minimize percolation to ground water (NASDA, 1999).

Other Requirements

The California Integrated Waste Management Board requires that excessive odor, dust, and feathers must be controlled to protect public health and well-being. Animal carcasses from CAFOs must be collected, stored, and removed in a manner approved by the state enforcement agency.

7.0 Enforcement Information

The state does not require routine site inspections. Inspections, prompted by complaints, are used to identify violators (NASDA, 1997). The enforcement agency also may inspect agricultural operations to enforce public health and well-being standards. The need and frequency of these inspections are based on complaints, the size of the facility, the potential of the facility to create excessive vectors, and the proximity to residential properties.

California conducts ground and surface water inspections by separating CAFO inspections into three geographical areas: Marin/Sonoma, Central Valley, and Chino Basin. Inspectors focus first on areas where the state has not been active and where CAFO facilities are concentrated. The inspectors conducted 200 federal inspections of dairy sites in Stanislaus, San Joaquin, and Merced counties in winter/spring 1998 (USEPA, 1998).

The Multi-Agency Dairy Pollution Task Force also sends teams of inspectors to complete inspections, prepare and evaluate inspection reports, and evaluate sampling data generated to determine which agency would best address violations (USEPA, 1998).

After an inspection, EPA may take a range of actions. The Agency may send warning letters

describing what conditions may lead to a violation. EPA may also send a Finding of Violation and Order informing facilities of their violations and requiring correction of the violations. Failure to comply with a compliance order may result in penalties of up to $27,500 per day of violation. In addition, EPA may seek an administrative penalty and assess a penalty of up to $11,000 per day of violation, with a maximum of $137,500. Finally, EPA may also begin a civil suit, asking a court to require a facility to take the appropriate action to cease or remedy the violation and to impose a penalty. More information about inspections can be found at *www.epa.gov/region09/cross_pr/animalwaste/california.html*.

8.0 Voluntary Programs

California EPA created "one-stop" Permit Assistance Centers throughout the state that provide regulatory compliance assistance and onsite permit expertise to businesses needing guidance through the state and local regulatory systems. Implementation of a Water Quality Assurance Plan is another voluntary program that addresses CAFO-related issues (NASDA, 1997).

More than $450,000 in section 319 grants has been awarded since 1995 toward AFO assessment and education. These funds have been used toward projects in Marin-Sonoma. The Bay Area Resource Conservation District (RCD) received a section 319 grant to assess and address solutions for problems related to horse operations (USEPA, 1998).

The SWRCB offers loans from State Revolving Funds to assist with environmental compliance. In June 2001 SWRCB issued a $4 million loan to Merced County to establish a mini-loan program to help dairies implement BMPs. Future SRF projects are being considered (Martinson, 2000).

Within the state, the California Dairy Quality Assurance Committee (CDQAC) works proactively on animal and food safety issues. Committee members include USDA, CDFA, Western United Dairymen, Milk Producers Council, California Dairy Campaign, Farm Bureau Dairy Group, and producers and processors (USEPA, 1998). The CDQAC has created the California Dairy Quality Assurance Program (CDQAP), which uses self-assessment, third-party evaluation, and certification to promote environmental stewardship among producers. More than 1,000 producers have completed the environmental stewardship course and 20 have received certification (Varga, 2000).

The Santa Ana River Watershed Group includes multiple-stakeholders: federal and state agencies, environmental groups, and the dairy industry. The group developed a strategy to reduce manure accumulation in the Chino Basin over the long term and to provide short-term drainage controls to minimize the amount of dairy waste reaching the Santa Ana River and the region's ground water. The strategy focused on developing new composting and storage facilities in San Joaquin Valley, maximizing the existing composting capacity of the preserve, and developing new markets for manure and composted products. Additionally, the strategy addressed how dairy operations can comply with state and federal water quality requirements and the requirements of the National Animal Feeding Operations Strategy. It also developed an approach for relocating dairy farms to other areas and identified options for conserving open space and wildlife in the Santa Ana River watershed (USEPA, 2000c).

The Sonoma-Marin Animal Waste Committee is comprised of various stakeholders working together to control animal waste through voluntary and cooperative efforts. Examples include the development of compliance resolution procedures so that complaints and incidents may be

addressed in a timely manner. The committee also publishes a newsletter to inform stakeholders (Martinson, 2000).

The California Dairy Quality Assurance Program (CDQAP) is a partnership among California federal and state agencies, academia, and the dairy industry, created to promote quality dairy products and a healthy environment through improved farm practices. The program's objective is to assist California dairy producers in meeting all federal, state, regional, and local regulations relating to manure and nutrient management and to develop an environmental stewardship education program. CDQAP is entirely voluntary. The core components are continuing educational programs for producers, creating Environmental Stewardship Farm Management Plans specific to each dairy, and onsite evaluation by a third party. Producers completing the education program become "certified;" however, this certification carries no regulatory significance other than to inform local, regional, state, and federal agencies of the producer's effort toward meeting compliance. The exact policies and procedures by which a producer will become certified will be determined after a pilot program to be coordinated by the California Department of Food and Agriculture. All partners in this agreement will cooperate in the development of training materials to assist dairy producers with coming into compliance with all federal state, regional, and local environmental rules and regulations (USEPA, 2000b).

9.0 Additional State-Specific Information

Cooperative Extension Service

Agricultural Extension Programs provide additional support to California farmers. University of California Davis, Cooperative Extension has farm advisors with extensive animal waste issue expertise. Also, the Extension's Livestock Waste Management Specialist teaches a well-attended environmental stewardship short course for California dairy operators (USEPA, 1998).

University of California Cooperative Extension provides coordination and technical support for the regular meetings of the Sonoma/Marin Animal Waste Committee. An informal group of agriculturalists, federal and state agency staff, consultants, and Farm Bureau members and staff discusses waste management issues and solutions and assists dairy operators with state and federal water quality control regulations.

Due to the size of California, the University of California has several cooperative extensions within the state. UC Cooperative Extensions are in the North Coast and Mountain Region (*http://ncmr.ucdavis.edu/*), the Central Valley Region (*http://cvr.ucdavis.edu/*), and the Central Coast and South Region (*http://ccsr.ucdavis.edu/*).

Comprehensive Nutrient Management Plan (CNMP) Certification

California does not have a comprehensive nutrient management plan (CNMP) preparer certification program. Nutrient and Irrigation Water Management Plans (NIWMPs), however, are required for CAFOs in the Central Valley Region of California if a facility meets general waste discharge requirements issued by the Regional Water Quality Control Board. NIWMPs are recommended by the Regional Water Quality Control Board for all CAFOs. NIWMPs can be prepared by any person who understands crop nutrient and water requirements (CAEPA, 2000).

Other State Agency Involvement

California's Integrated Waste Management Board has set standards to safeguard public health and well-being that may have an impact on animal waste management at CAFOs.

Central Valley area leads the Multi-Agency Dairy Task Force. The task force targets incidents of dairy discharges to surface water in Sacramento, San Joaquin, Stanislaus, and Merced counties. During winter/spring 1998, the Task Force investigated surface water pollution caused by discharges of dairy wastewater in the Central Valley. Participating agencies include California Fish and Game, Central Valley Regional Water Quality Control Board, Department of Toxic Substances Control, San Joaquin County D.A., U.S. Fish and Wildlife, U.S. Attorney's Office, Office of the Attorney General, CA Department of Food and AG, Stanislaus County D.A., and USEPA Region 9.

Other Information

A study of the Hilmar area conducted by the RWQCB may serve as an example of the extent of ground water contamination by nitrate in California's Merced County. The study indicates that within a 36-square-mile area, about 60 percent of the 69 wells sampled exceed the state MCL. These high nitrate levels are believed to be caused primarily by dairy waste (USEPA, 1998).

Sonoma/Marin dairy operators use "range plans" to ensure compliance with water quality control regulations (USEPA, 1998). A local processor, Clover-Stornetta, offers incentives to dairies with approved range plans, including a higher price for their milk and marketing of the milk as an "environmentally conscious product." The product sells well.

In addition, CWA section 319 grants are funding a demonstration project for advanced pond systems, as well as a collaborative approach to addressing horse operation waste management issues in the Bay area (USEPA, 1998).

The SWRCB and RWQCB spend about $1.4 million annually on the state's regulatory program (Cantu, 2000).

The California Environmental Protection Agency, State Water Resource Control Board reports that the RWQCBs lack resources to implement an effective inspection program (Martinson, 2000).

10.0 References

CAEPA. 2000. *Central Valley Regional Water Quality Board, Confined Animal Facilities*. California Environmental Protection Agency. <www.swrcb.ca.gov/~rwqcb5/files.html#anchor617141>. Accessed April 2000.

Cantu, C. 2000. State Water Resource Control Board and the (nine) Regional Water Quality Control Board's comments on the proposed CAFO rules (Comment 204188). In *EPA/OW Concentrated animal feeding operations (CAFOs) CommentWorks*. ICF. Accessed February 2002.

Martinson, S. 2000. California Environmental Protection Agency, State Water Resources Control Board comments on the proposed CAFO rules (204272). In *EPA/OW Concentrated animal feeding operations (CAFOs) CommentWorks*. ICF. Accessed February 2002.

NASDA. 1997. *Summary Matrix of State Survey on Waste and Manure Management Regulations*. National Association of State Departments of Agriculture.

NASDA. 1999. *Environmental Laws Affecting California Agriculture. A Project of the National Association of State Departments of Agriculture Research Foundation through the National Center for Agricultural Law, Research, and Information*. National Association of State Departments of Agriculture. <www.nasda-hq.org/nasda/nasda/Foundation/state/California.pdf>. Accessed September 2000.

1996-97 California Permit Handbook. n.d. *California Office of Permit Assistance, California Trade and Commerce Agency*. <http://commerce.ca.gov/business/ permits/index.html>. Accessed December 1997.

Oda, Terry. U.S. Environmental Protection Agency, Region 9. Summary of state program information sent to Ruth Much (SAIC), fall 1997.

USDA. 1999. *1997 Census of Agriculture: Geographic Area Series*. U.S. Department of Agricultural Statistics Service, Washington, DC.

USDA. 2000. Specific queries conducted on the 1997 Census of Agriculture published data. U.S. Department of Agriculture.

USEPA. 2000a. *California Animal Waste Management*. U.S. Environmental Protection Agency Region 9. <www.epa.gov/region09/cross_pr/animalwaste/california.html>. Accessed July 2000.

USEPA. 2000b. *Dairy Waste Management: An Integral Approach to Education and Compliance*. U.S. Environmental Protection Agency Region 9. <www.epa.gov/region09/cross_pr/animalwaste/dairyqa.html>. Accessed July 2000.

USEPA. 1998. *Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs)*. Results of June 1998 Survey of States and Regions compiled by G. Beatty. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

USEPA. 2000c. *Santa Ana River Watershed Manure Management*. U.S. Environmental Protection Agency Region 9. <www.epa.gov/region09/cross_pr/animalwaste/chino.html>. Accessed August 2000.

USEPA. 1999. *What to Expect When You're Inspected: A Guide for California Dairy Operators*. U.S. Environmental Protection Agency Region 9. <www.epa.gov/region09/cross_pr/animalwaste/california.html>. Accessed August 2000.

Vargas. A. 2000. California Department of Food and Agriculture comments of the proposed CAFO rules (Comment 202065). In *EPA/OW Concentrated animal feeding operations (CAFOs) CommentWorks*. ICF. Accessed February 2002.

Hawaii's CAFO Program

1.0 Background

Based upon information provided to EPA by USDA there are 27 AFOs with 300 to 1,000 animal units and 17 AFOs with more than 1,000 animal units in Hawaii (USDA, 1999; USDA, 2000).

2.0 Lead Regulatory Agency

State oversight of CAFO issues is complaint-driven. Responsibility for animal waste management is divided between two branches of the Department of Health (DOH) (*www.state.hi.us/health/*). The Clean Water Branch (*www.state.hi.us/health/eh/cwb/index.htm*) issues individual NPDES permits for CAFOs, while the Wastewater Branch (*www.state.hi.us/health/eh/eiemww00.htm*) reviews plans and specifications for AFOs and conducts complaint-based inspections (USEPA, 2000).

3.0 State Regulations Regarding AFOs/CAFOs

The NPDES Permit is regulated under Hawaii Administrative Rules, Chapter 11-55 (*www.state.hi.us/health/rules/emd/11-55.pdf*), Water Pollution Control.

4.0 Types of Permits

NPDES

Hawaii is authorized to administer the NPDES program.

5.0 Permit Coverage

Not all animal feeding operations are required to obtain NPDES permits. Exclusions are consistent with the federal regulation.

6.0 Permit Conditions

No information was found in publically available sources.

7.0 Enforcement Information

The Wastewater Branch of the Department of Health conducts complaint-based inspections (USEPA, 2000).

8.0 Voluntary Programs

No information was found in publically available sources.

9.0 Additional State-Specific Information

Cooperative Extension Service

Although the University of Hawaii at Manoa, College of Tropical Agriculture and Human Resources, Extension and Outreach does not offer programs for animal feedlots, it does provide programs for sustainable agriculture and a number of agriculture-related activities. Information about the Extension can be found at *www2.ctahr.hawaii.edu/extout/extout.asp*.

Comprehensive Nutrient Management Plan (CNMP) Certification

Hawaii does not have a comprehensive nutrient management plan preparer certification program.

Other Information

Hawaii Department of Health is funding a 2-year, EPA-sponsored section 319(h) nonpoint source project to educate livestock producers about proper animal waste management. This project will inventory AFOs in Hawaii and conduct educational workshops on each major island. The project will also conduct onsite assessments of specific operations, sponsor discussions about markets for animal waste products, and provide technical assistance for pollution prevention. Hawaii's Natural Resources Conservation Service (NRCS) also is educating Hawaiian communities on proper animal waste management (USEPA, 2000).

10.0 References

DOH. 2000. Clean Water Branch Forms. Department of Health, Environmental Health. <www.state.hi.us/health/eh/cwb/forms/index.html>. Accessed October 2000.

USDA. 1999. *1997 Census of Agriculture: Geographic Area Series*. U.S. Department of Agricultural Statistics Service, Washington, DC.

USDA. 2000. Specific queries conducted on the 1997 Census of Agriculture published data. U.S. Department of Agriculture.

USEPA. n.d. *Application for Permit to Discharge Wastewater, Confined Animal Feeding Operations and Aquatic Animal Production Facilities*. <www.epa.gov/owm/pipes/npdesmis/3510-2B.PDF>. Accessed October 2000.

USEPA. 1997. *Permit Compliance System*. U.S. Environmental Protection Agency, Washington DC.

USEPA. 1998. *Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs)*. Results of June 1998 Survey of States and Regions Compiled by G. Beatty, U.S. Environmental Protection Agency, Office of Water, Washington, DC.

USEPA. 2000. *Hawaii Animal Waste Management*. U.S. Environmental Protection Agency, Region 9. <www.epa.gov/region09/cross_pr/animalwaste/hawaii.html>. Accessed October 2000.

Nevada's CAFO Program

1.0 Background

Based upon information provided to EPA by USDA it is estimated that there are 35 AFOs with from 300 to 1,000 animal units and 20 AFOs with more than 1,000 animal units in Nevada. These are primarily in the dairy and poultry (turkey) livestock sectors (USDA, 1999; USDA, 2000).

Although Nevada's ranches are few in number, they ranked third in the nation in size and averaged 3,500 acres in 1998. Nevada agriculture focuses primarily on range livestock production. State livestock enterprises include cattle, dairy, sheep, lambs, and hogs. Although cattle and calves were the state's leading agricultural industry in 1998 (NVDOA, 1998), dairies are the largest type of animal feeding operation (AFO) requiring regulatory control. In the same year, of Nevada's 150 dairy operations, 23 had more than 200 cows and 12 had 500 to 700 cows. These dairies may be considered CAFOs if they can potentially discharge into U.S. waters. Most of the dairies are northwest of Las Vegas, in the Moapa and Amargosa Valley areas, and east of Reno, in the Yerrington and Fallon areas (USEPA, 2000). The larger cattle and sheep ranches are in northern Nevada (NVDOA, 1998).

Nevada's natural conditions tend to support proper management of animal waste. The arid climate results in rare unintentional wet weather discharges. Nevada's larger AFOs generally have ample cropland available for applying their animal waste (USEPA, 2000).

2.0 Lead Regulatory Agency

The lead regulatory agency regarding AFOs in Nevada is the Division of Environmental Protection (NDEP). Information about the Division can be found at *www.state.nv.us/ndep/*.

3.0 State Regulations Regarding AFOs/CAFOs

Regulations regarding water pollution control are in Nevada Administrative Code (NAC) 445A.228 through 445A.263, Discharge Permits (*www.state.nv.us/ndep/nac/445a070.wpd*). According to NAC 445A.228, Nevada may regulate discharges from facilities that confine animals for a total of 30 days or more at any time during the previous 12 months if the animals were in excess of 1,000 slaughter or feeder cattle, 700 milker or dry mature dairy cattle, 2,500 swine over 55 pounds, 500 horses, 10,000 sheep, 55,000 turkeys, 100,000 laying hens or broilers if the facility has continuous overflow watering, 30,000 laying hens or broilers if the facility has a liquid manure handling system, 5,000 ducks, or more than 1,000 units of a combination of animals (NDEP, n.d.a.).

4.0 Type of Permits

NPDES

Nevada is an NPDES authorized state. The Bureau of Water Pollution Control (BWPC) is responsible for issuing NPDES permits.

5.0 Permit Coverage

Not all animal feeding operations are required to obtain NPDES permits. Exclusions are consistent with the federal regulation.

6.0 Permit Conditions

Approvals

No information was found in publicly available sources.

Lagoon Design and Specifications

No information was found in publicly available sources.

Discharge Rules

The Nevada Division of Environmental Protection is working with the Nevada Division of Agriculture, the Natural Resources Conservation Service (NRCS), and the 12 largest state dairies to analyze animal waste storage options in the event of a 25-year, 24 hour storm event. This analysis will be included in the dairy permit applications (USEPA, 2000).

Waste Management Plans

No information was found in publicly available sources.

Separation Distances

No information was found in publicly available sources.

Land Application Requirements

No information was found in publicly available sources.

7.0 Enforcement Information

No information was found in publicly available sources.

8.0 Voluntary Programs

No information was found in publicly available sources.

9.0 Additional State-Specific Information

Cooperative Extension Service

Although the University of Nevada, Reno, Cooperative Extension has an agricultural program, it does not provide any programs targeted at CAFOs. Information about the Extension can be found at *www.nce.unr.edu/*.

Comprehensive Nutrient Management Plan (CNMP) Certification

No information was available on CNMP certification in Nevada.

10.0 References

NDEP. n.d.a. *Nevada Administrative Code, Chapter 445A, Sections 228 through 263, Discharge Permits*. Nevada Division of Environmental Protection. <www.state.nv.us/ndep/nac/445a070.wpd> or <www.state.nv.us/ndep/admin/nrs.htm>. Accessed October 2000.

NDEP. n.d.b. *Permit Application Forms, Reporting Forms, and Fee Schedules*. Nevada Division of Environmental Protection, Bureau of Water Pollution Control. <www.state.nv.us/ndep/bwpc/forms.htm>. Accessed October 2000.

NVDOA. 1998. *Agriculture in Nevada*. Nevada Department of Agriculture. <www.state.nv.us/b&i/ad/>. Accessed October 2000.

USDA. 1999. *1997 Census of Agriculture: Geographic Area Series*. U.S. Department of Agricultural Statistics Service, Washington, DC.

USDA. 2000. Specific queries conducted on the 1997 Census of Agriculture published data. U.S. Department of Agriculture.

USEPA. n.d. *Application for Permit to Discharge Wastewater, Confined Animal Feeding Operations and Aquatic Animal Production Facilities*. <www.epa.gov/owm/pipes/npdesmis/3510-2B.PDF>. Accessed October 2000.

USEPA. 2000. *Nevada Animal Management*. U.S. Environmental Protection Agency. <www.epa.gov/region09/cross_pr/animalwaste/nevada.html>. Accessed October 2000.